MARATHON EQUIPMENT INC.
4041 NORTH SERVICE RD, UNIT #2
BURLINGTON, ON, CANADA
L7L 4X6

SPECIFICATIONS

MM250DT
250 GALLON MASTIC MIXER

PURPOSE

The mastic mixer must be able to safely heat and agitate all grades of mastic sealants and fiber modified mastic sealants in a consistent process. Qualified bidders must provide a factory trained representative for initial startup and training while also maintaining an active inventory of replacement parts for the equipment.

	1. GENERAL	YES	NO
1A	The machine must be new, current year production and meet the needs of this specification without modification. Any hybrid, one-off or prototype units are deemed unacceptable. Equipment shall have a working volume of nothing less than called for in this specification.		
1B	Complete operation and training manuals are to be provided along with a recommended repair parts list.		
1C	The machine must be capable of starting at ambient temperature and bringing material to pouring temperature in less than two hours.		
1D	The machine shall be an oil jacketed design to provide consistent heating and melting throughout. Direct fire or air jacketed units are not acceptable.		
1E	The machine must utilize digital thermostat control for both material and heat transfer oil temperatures for maximum accuracy and to maintain each temperature within the manufacturer's specified range.		
1F	The machine must have calibrated analog dial thermometers located at the rear. Temperature intervals shall be no more than 5°F (2.8°C) for accuracy.		
1G	The machine must have continuous sealant agitation to provide the correct product temperature, viscosity and mixture prior to application.		

	2. SAFETY FEATURES	YES	NO
2A	Top loading door features a safety shut off switch so that agitator rotation stops once door opens and only resumes once door is closed.		
2B	Rear discharge gate to be spring loaded with a safety lock-out pin to prevent accidental discharge of material.		
2C	Material loading height will be no more than 60 inches (152.4 cm) for proper lifting ergonomics and to eliminate operator fatigue.		

	2. SAFETY FEATURES (cont'd)	YES	NO
2D	Machine includes a vented heat transfer oil expansion tank. Sealed expansion tanks will be considered a fatal deviation and unacceptable.		
2E	Minimum 10lb. fire extinguisher mounted to unit in a dedicated bracket. Location shall always be accessible to operator.		
2F	Machine to be outfitted with heat resistant safety decals and signage. 2 inch (5.08 cm) conspicuity tape along trailer frame to maximize night time visibility.		

	3. TRAILER & FRAME	YES	NO
3A	Machine is trailer mounted and capable of being safely towed at highway speeds when fully loaded.		
3B	The frame is to be constructed of minimum 6 inch x 8.2 pound gusseted steel channel for safety and strength.		
3C	Tongue equipped with a bolt-on heavy duty 3 inch (7.62 cm) pintle hitch ring and be height adjustable for level towing, 14 inches up and down.		
3D	Heavy duty screw type, side wind trailer jack with a 7000lb (3,175 kg) capacity to be welded to frame.		
3E	Equipped with LED stop, tail, and turn lights. Clearance lighting also to be LED.		
3F	Illuminated license plate bracket attached to the rear of street side fender.		
3G	Junction box installed to allow easy changeover of different towing vehicle plugs. A standard seven (7) pin flat RV round plug will be included.		
3H	Equipped with two safety chains measuring no less than 48 inches (35.56 cm) long directly attached to slip hooks.		

	4. SUSPENSION & WHEELS	YES	NO
4A	Equipped with tandem axle slipper spring system with a GAWR (Gross Axle Weight Rating) of 14,000lbs (6,350 kg.)		
4B	Electric brakes on all four wheels with an emergency breakaway switch included.		
4C	Heavy duty ST235/85R16 radial tires (Load Range E) mounted on aluminum rims.		

	5. TANK	YES	NO
5A	Double boiler type design with a minimum working volume of 250 gallons (946 L). Working volume described as the maximum usable amount of sealant that can be contained in the material tank at one time and poured out of the discharge.		
5B	Tanks must be constructed of no less than 1/4 inch steel.		
5C	Firing chamber constructed with 10 gauge (.1345 inch) steel, lined with 1.5 inch (3.81 cm) ceramic insulation on top, bottom & both sides.		
5D	Rear discharge port has a minimum opening of 6 inches (15.24 cm) to allow sufficient material discharge with all types of mastic materials.		
5E	Minimum height from the ground to the bottom of the discharge gate spout shall be 26 inches (66.04 cm) to allow clearance for heated chute, heated shoveling tray or a walk behind dispenser to fill without contact.		
5F	Heat transfer oil jacket to have complete material vat surface coverage including front, rear & both sides.		
5G	Heat transfer oil tank must hold a minimum of 45 gallons (170 L) at ambient temperature.		
5H	Heat transfer oil shall be Shell S2X (ISO grade 68.)		
5I	Heat transfer oil jacket shall have a single drain port, located underneath the unit at the rear.		
5J	Tank will have two 1500 watt, 120 volt overnight heaters. Heaters are installed on opposite sides of the unit's rear wall in a protective enclosure with electrical plug hook-up.		

	6. HEATING SYSTEM	YES	NO
6A	Tank features one 12 volt 340,000 BTU diesel burner.		
6B	The burner must be self-priming and be equipped with a fuel pressure gauge.		
6C	Diesel burner shall be ignited by a high voltage, interrupted ignition 12 volt primary controller and electronic spark igniters.		
6D	Externally mounted green LED beacon light indicating when diesel burner is active.		
6E	Tool heater box shall have two 80,000 BTU propane burners with needle valve flow control.		
6F	Heated chute shall have one 80,000 BTU propane burner with needle valve flow control.		

	7. HYDRAULICS	YES	NO
7A	Minimum 12 gallon (45 L) reservoir tank with a 10 micron in-line filter, located on return side.		
7B	Tank shall be a bolt-on design to allow future replacements.		
7C	Hydraulic oil reservoir equipped with a low mount 1.5 inch (3.81 cm) suction strainer rated at 15 GPM.		
7D	Engine driven hydraulic pump rated at 6 GPM (13.8 CC.)		
7E	Agitator forward/reverse will be controlled from a hydraulic manifold with lever control handle.		
7F	Agitation and dispensing speed controlled by a hydraulic speed control located in the hydraulic manifold.		
7G	Analog pressure gauge for agitator motor pressure, located on hydraulic manifold.		

	8. AGITATION SYSTEM	YES	NO
8A	Full sweep horizontal agitator design. Agitator shaft must include angled paddles for best mixing and dispensing.		
8B	Power from diesel engine is transferred to agitator through gear box and chain coupling attachment. Any other form is unacceptable.		
8C	Chain sprockets affixed to agitator shaft with taper lock bushings.		
8D	Gear box shall be a HECO Gear model 16, featuring a 5.2:1 ratio providing 30,000 inch pounds of force (2,500 ft-lbs.)		

	9. ENGINE	YES	NO
9A	Rehlko three cylinder diesel engine. Direct injected, water cooled, 23 HP, tier 4 final emissions.		
9B	Electric start with auto shutdown protection for alternator, oil pressure, coolant temperature, air filtration system and low voltage.		
9C	Engine faults and integrated hour meter to be indicated on illuminated control box for easy viewing.		
9D	Adjustable throttle provided with quick-kill option to return to idle RPM.		
9E	Engine to have a protective weather guard installed that allows access to all filters and fill points without the need to remove.		

	10. FUEL SYSTEM	YES	NO
10A	Minimum 30 gallon (113.5 L) diesel fuel tank. The tank will incorporate a lockable fuel fill cap and an analog fuel gauge.		
10B	The engine shall have it's own spin-on type fuel filter with ball valve shut off to simplify filter replacement and/or maintenance. Ball valve to be located on fuel tank.		
10C	The diesel burner shall have it's own spin-on type fuel filter with ball valve shut off to simplify filter replacement and/or maintenance. The filter shall be located near the fuel tank for ease of maintenance. Ball valve to be located on fuel tank.		
10D	Tank shall be a bolt-on design to allow future replacements.		

	11. TEMPERATURE CONTROL	YES	NO
11A	Dual digital thermostat controllers that automatically regulate oil and material temperature based off of a user defined set point.		
11B	Control intervals no greater than one degree Fahrenheit via continuously monitored thermocouples.		
11C	Controllers must display an error code and shut burner down should any thermocouple failure occur.		
11D	Thermostat power is controlled by a single toggle switch located on panel.		
11E	Controllers must be located in a weather tight box on the front curbside of machine.		
11F	Burner reset button located on panel in the event of a fault where burner enters "lockout mode."		

	12. TOOL HEATER & TOOLS	YES	NO
12A	Tool heater box shall measure 36 inches (91.4 cm) in height, 22 inches (55.8 cm) in width, and 16.4 inches (41.6 cm) in length, with an overall length (including tool rack) of 39 inches (99 cm.)		
12B	Tool heater constructed with 10 gauge (.1345") steel.		
12C	Tool heater to have large insulated front door measuring 31.25 inches (79.3 cm) in height and 16.1 inches (40.8 cm) in length.		
12D	Tool heater has integrated drip catcher plate and a removable cleanout tray.		

	12. TOOL HEATER & TOOLS (cont'd)	YES	NO
12E	Tool rack integrated into heater box allowing a variety of tools to be stored safely. A sliding lock design will secure handles during transport.		
12F	Tool rack offers four levels of lockable storage and a non-lockable top level for quick removal of tools while working.		
12G	Included tools: chute scraper, 8 inch (20.3 cm) x 4 inch (10.1 cm) smoother, 12 inch (30.48 cm) flat squeegee and 18 inch (45.72 cm) U-squeegee.		

	13. MISCELLANEOUS	YES	NO
13A	Single reverse-loading door - minimum 14 inch (35.56 cm) x 29 inch (73.66 cm).		
13B	Loading door is located on the curb side of the machine and shall be an insulated and lockable design.		
13C	Trailer fenders constructed with 10 gauge (.1345 inch) steel and welded to machine. Fenders shall be no less than 72 inches (182.88 cm) in length and 14 inches (35.56 cm) in width to facilitate handling and easiest loading of material blocks.		
13D	Heated chute shall measure 35 inches (88.9 cm) long and 8 inches (20.32 cm) wide. Total length shall measure 42 inches (106.68 cm) long including rear flare.		
13E	Heated chute shall be built with an extended length handle for leverage and to allow safe maneuvering away from all heat sources.		
13F	All oil lines and hoses located near sources of heat shall be covered in heat resistant, silicone jacketed fiberglass sleeve for durability.		
13G	300,000 BTU propane hand torch provided with 15 foot hose, located near rear gate.		

	14. PAINT	YES	NO
14A	Machine to be painted using epoxy primer and a urethane top coat. Machine to be painted manufacturer's standard colour unless optional custom colour is purchased.		

	15. WARRANTY	YES	NO
15A	The manufacturer shall warranty the equipment for a period of two years with unlimited hours of use. Trailer frames will be covered for a period of five years with unlimited hours of use. Third party coverages are excluded from the above time frames and carry their own coverage timeline(s). Bidder warranty policy must be included with bid submittal and shall outline all coverages and timelines.		

	16. OPTIONS	PART NUMBER	YES	NO
16A	Slow moving vehicle sign	11-1027		
16B	Amber strobe light	11-8140		
16C	Flashing LED arrow stick advisor	11-1025		
16D	LED work light (installed, each)	11-1010		
16E	Heated shoveling tray	11-1008		
16F	2-5/16” ball hitch (replaces pintle ring)	11-8109		
16G	Spare tire and rim mounted to trailer	SPTIRE		
16H	Aluminum rims (upgrade)	RIMS		
16I	Custom paint colour (blue, grey, orange, yellow, or red)	13-9999		
16J	Heated chute extension	11-8036		
16K	Tool box	11-1147		
16L	Hydraulic surge brakes	11-2046		
16M	1500 watt, 240 volt overnight heaters	11-1506		
16N	Hand tool - 8” X 8” X 3” shoebox	07-0060		
16O	Hand tool - 8” X 10” X 3” shoebox	07-0062		
16P	Hand tool - 8” X 12” X 3” shoebox	07-0064		
16Q	Hand tool - 8” X 14” X 3” shoebox	07-0066		
16R	Long handle tank scraper	07-0027		
16S	Equipment - MD12 - 12 gallon walk behind dispenser	50-1012		
16T	Electronic Control (Agitation)	11-1030		

These specifications are not intended to be restrictive, but are meant to describe the kind and size of unit desired to be purchased in detail. If bidder is basing the proposal on equipment other than what is specified in these bid documents and wishes the equipment to be considered as an “approved equal” they shall submit on a separate sheet, an item by item description of that which is proposed. The bidder’s specifications must be complete and of sufficient detail to cover all items included in this bid specification and in a manner that allows a direct comparison. Any item not covered will be deemed as not meeting specifications. Such bidder shall also include, but not as a substitute for the above, any manufacturer’s literature. In addition, if the bidder takes exception to any item they shall note this and describe in detail the exception and how the proposal is an “approved equal”.

Failure to carry out the provisions noted herein may be deemed sufficient reason to reject the bidder’s proposal.